

WHAT IS CLAIMED IS:

1. A nonwoven article comprising a plurality of intertwined fibers, wherein the density of the fibers in the nonwoven varies across the nonwoven article.
- 5 2. The nonwoven article according to Claim 1, wherein the nonwoven includes a first zone with a first density of the fibers therein, and a second zone with a second density of the fibers therein.
3. The nonwoven article according to Claim 2, wherein the first zone and the second zone are connected by the intertwining of the fibers between the
10 first zone and the second zone.
4. The nonwoven article according to Claim 2, wherein the fibers forming the nonwoven comprise a plurality of high melt polyester fibers and a plurality of low melt polyester fibers.
5. The nonwoven article according to Claim 2, wherein the fibers forming
15 the nonwoven comprise a plurality of high melt polyester fibers and a plurality of core sheath polyester fibers having a low melt polyester sheath.
6. The nonwoven article according to Claim 5, wherein the low melt polyester sheath has a melt temperature from about 110°C to about 180°C.
7. The nonwoven article according to Claim 5, wherein the core sheath
20 polyester fibers comprise from about 40% to about 90% by weight of the fibers forming the nonwoven.
8. The nonwoven article according to Claim 5, wherein the high melt polyester fibers comprise from about 40% to about 10% by weight of the fibers forming the nonwoven.
- 25 9. The nonwoven article according to Claim 1, wherein the nonwoven includes a first zone with a first density of fibers therein, and a second zone in which the density of fibers therein varies across the second zone.

10. The nonwoven article according to Claim 9, wherein the first zone and the second zone are connected by the intertwining of the fibers between the first zone and the second zone.
11. The nonwoven article according to Claim 9, wherein the fibers forming the nonwoven comprise a plurality of high melt polyester fibers and a plurality of low melt polyester fibers.
12. The nonwoven article according to Claim 9, wherein the fibers forming the nonwoven comprise a plurality of high melt polyester fibers and a plurality of core sheath polyester fibers having a low melt polyester sheath.
13. The nonwoven article according to Claim 12, wherein the low melt polyester sheath has a melt temperature from about 110°C to about 180°C.
14. The nonwoven article according to Claim 12, wherein the core sheath polyester fibers comprise from about 40% to about 90% by weight of the fibers forming the nonwoven.
15. The nonwoven article according to Claim 12, wherein the high melt polyester fibers comprise from about 40% to about 10% by weight of the fibers forming the nonwoven.
16. The nonwoven article according to Claim 1, wherein the fibers forming the nonwoven comprise a plurality of high melt polyester fibers and a plurality of low melt polyester fibers.
17. The nonwoven article according to Claim 1, wherein the fibers forming the nonwoven comprise a plurality of high melt polyester fibers and a plurality of core sheath polyester fibers having a low melt polyester sheath.
18. The nonwoven article according to Claim 17, wherein the low melt polyester sheath has a melt temperature from about 110°C to about 180°C.

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20. The nonwoven article according to Claim 17, wherein the high melt polyester fibers comprise from about 40% to about 10% by weight of the fibers forming the nonwoven.

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Figure 1 consists of 12 subplots, each representing a different value of k from 0 to 11. Each subplot is a histogram showing the frequency of the number of non-zero elements in the vector x_k . The x-axis for all plots is labeled 'Number of non-zero elements' and ranges from 0 to 10. The y-axis is labeled 'Frequency' and ranges from 0 to 10. The distributions are roughly bell-shaped and centered around 5-6 non-zero elements. The plots are arranged in a 6x2 grid. The first row shows $k=0$ to $k=5$, and the second row shows $k=6$ to $k=11$. The distributions become slightly more concentrated as k increases.